

# MARSHALL STAR

Serving the Marshall Space Flight Center Community

Nov. 10, 2010

## Discovery to launch no earlier than Nov. 30

By Sanda Martel

The launch of space shuttle Discovery was rescheduled after a hydrogen leak was detected at the Ground Umbilical Carrier Plate, or GUCP, during the fueling process Nov. 5 at Kennedy Space Center. The Nov. 30 launch time is 3:02 a.m. CST.

The GUCP is an attachment point between the external tank and a 17-inch pipe that carries gaseous hydrogen safely away from the shuttle to the flare stack, where it is burned off.

Similar incidents occurred during the final stages of liquid hydrogen loading of shuttle Discovery in March 2009 for the STS-119 mission and shuttle Endeavour in June 2009, for the STS-127 mission.

Teams are evaluating the GUCP leak, as well as a crack in the intertank foam of Discovery's external tank, which also was discovered Nov. 5. The location of the 7-inch-long crack is at the flange, where the ridged intertank connects to the liquid oxygen tank.

Between Nov. 1 and Nov. 5, the launch was delayed by a combination of weather and mechanical problems.

See *Discovery* on page 3



## 'Have you given yet?'

"Have you given to the Combined Federal Campaign yet?" That's the question Marshall Space Flight Center organization leads are posing to civil service employees in staff meetings across the center this week, according to CFC executive chairperson Ken Dunn.

As of Nov. 9, the Marshall Center had raised \$353,763 for the annual federal fundraiser, which benefits charitable organizations at the local, state and national level. Marshall's goal is to raise \$675,000 by the campaign's end Dec. 10.

"As of Nov. 12, we have just 20 working days until our deadline," Dunn said. He noted that Marshall beat its 2009 goal by a record margin – but that success was aided by a nearly two-week extension of the donation deadline and record contributions in December.

"We will not have that same opportunity this year," he said, "so it's time to make that donation."

Visit <http://cfc.msfc.nasa.gov> for more information or to donate to CFC.



## Bolden to hold all-hands meeting at Marshall on Nov. 16

NASA Administrator Charles Bolden will hold an all-hands meeting with Marshall Space Flight Center team members in

Activities Building 4316 on Nov. 16 at 9 a.m. A bus schedule will be provided on Inside Marshall.



Charles Bolden

# FASTSAT microsatellite ready to share ride to space

By Kim Newton

Last week, NASA's Fast, Affordable, Science and Technology Satellite, or FASTSAT, passed the Flight Readiness Review. The satellite is approved for launch on the Air Force Space Test Program's – or STP – upcoming mission, STP-S26, which will launch from the Alaska Aerospace Corp.'s Kodiak Launch Complex on Kodiak Island, Alaska, on Nov. 19.

FASTSAT was designed, developed and tested at the Marshall Space Flight Center in partnership with the Von Braun Center for Science & Innovation and Dynetics Inc. of Huntsville. Dynetics provided key engineering, manufacturing and ground operations support for the new microsatellite. Thirteen local firms, as well as the University of Alabama in Huntsville, were also part of the project team.

Earlier this month, FASTSAT and three other secondary payload satellites were mated to the multi-payload adapter atop the Minotaur IV launch vehicle in preparation for launch. FASTSAT will carry six small payloads to low Earth orbit,

## *NanoSail-D to launch on upcoming FASTSAT mission*

NanoSail-D will launch on the upcoming FASTSAT mission and demonstrate the deployment of a compact solar sail boom system that could lead to further development of this alternate propulsion technology.

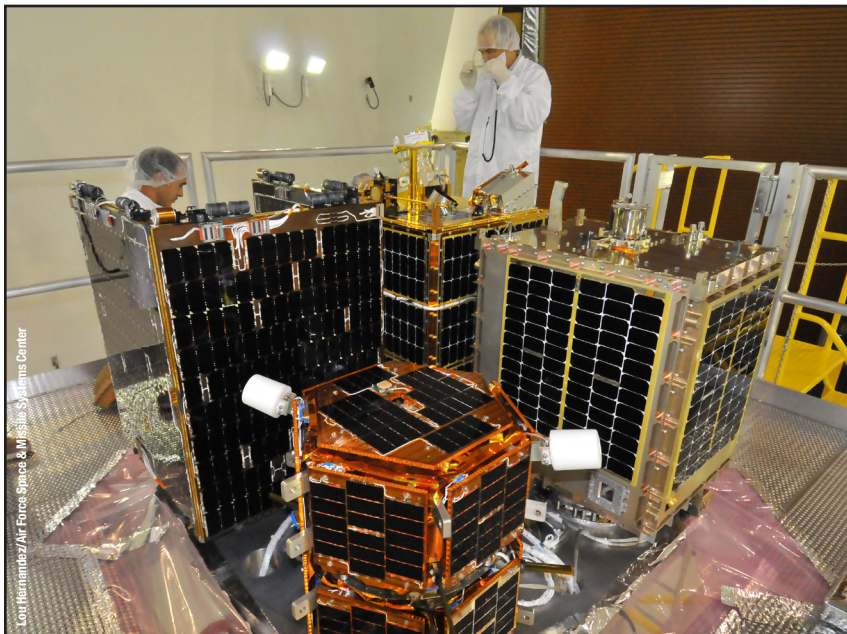
The main objective of the NanoSail-D mission is to be the first nanosatellite ejected from a micro-satellite. To accomplish this goal, it is critical to control the FASTSAT attitude and ejection timing so that the NanoSail-D satellite does not contact one of the other satellites on this mission.

The second goal is to deploy the sail so that the satellite deorbits in a relatively short time period. The NanoSail-D satellite will remain in orbit for 70-120 days before it re-enters the atmosphere and disintegrates.

NanoSail-D is a nanosatellite, which weighs about 8.5 pounds, and is approximately the size of a small loaf of bread. NanoSail-D will deploy a solar sail with an area of roughly 100 square feet, which is about the size of a large tent. When the onboard timer activates the internal mechanism, the sail deploys in only 5 seconds, which is similar to a jack-in-the-box.

The sail is made of a special flight material called CP1. CP1 is similar to a large sheet of saran wrap with an aluminum coating on one side. The sail material is 7.5 microns thick, which is 10-25 times thinner than an average human hair and tears very easily.

The Marshall Space Flight Center developed the NanoSail-D satellite in collaboration with the Nanosatellite Missions Office at NASA's Ames Research Center in Moffett Field, Calif. The prime contractor, NeXolve Inc, a division of ManTech Corp., designed the sail deployment system. The University of Alabama in Huntsville provided key design support. Santa Clara University in California is performing ground station operations for NanoSail-D. The U.S. Army Space and Missile Defense Command in collaboration with the Von Braun Center for Science & Innovation, both located in Huntsville, supported and sponsored the effort for the Space Test Program STP-S26 mission.



Four satellites sit atop the Minotaur IV launch vehicle that will launch them to space Nov. 19 on the STP-S26 mission.

demonstrating a critical ability to provide low-cost opportunities for scientific and technical payloads to get to space.

FASTSAT is NASA's first microsatellite designed to create a capability that increases opportunities for secondary, scientific and technology payloads, or rideshares, to be flown at lower cost than previously possible.

The overall objective of the FASTSAT mission is to demonstrate the capability to build, design and test a microsatellite platform to enable governmental, academic and industry researchers to conduct low-cost scientific and technology experiments on an autonomous satellite in space.

For more information, visit [http://www.nasa.gov/mission\\_pages/smallsats](http://www.nasa.gov/mission_pages/smallsats).

*Newton is a public affairs officer in the Office of Strategic Analysis & Communications.*

# Obituaries

**Nancy Woodard Shelton**, 71, of Moulton died Aug. 18. She retired from the Marshall Center in 1965 as a secretary. She is survived by her husband, Billy W. Shelton.

**Robert Garrett**, 86, of Huntsville died Sept. 21. He retired from the Marshall Center in 1979 as a flight systems engineer. He is survived by his wife, Juanita Burch Garrett.

**James Coggin**, 87, of Huntsville died Sept. 21. He retired from the Marshall Center in 1987 as an administrative clerk.

**Joseph Murphy Walters Sr.**, 87, of Huntsville died Oct. 2. He retired from the Marshall Center in 1980 as a flight structures engineer. He is survived by his wife, Clair Walters.

**Daniel Smitherman**, 72, of Huntsville died Oct. 6. He retired from the Marshall Center in 1999 as a flight systems operation engineer. He is survived by his wife, Allison W. Smitherman.

**Harold Hunter**, 71, of Cocoa Beach, Fla., died Oct. 8. He retired from the Marshall Center in 1995 as a launch

and flight operations engineer. He is survived by his wife, Janet E. Hunter.

**Lloyd Ogle**, 90, of Huntsville died Oct. 8. He retired from the Marshall Center in 1973 as an engineering technician supervisor. He is survived by his wife, Vel Ogle.

**Wayne Barnes**, 75, of Huntsville died Oct. 10. He retired from the Marshall Center in 1990 as an aerospace engineering technician. He is survived by his wife, Agnes Marie Campbell Barnes.

## Discovery *Continued from page 1*

The primary payload for the 11-day STS-133 mission is delivery of the Permanent Multipurpose Module to the International Space Station. Marshall Space Flight Center engineers were responsible for developing and integrating modifications that converted the Leonardo Multipurpose Logistics Module into a permanent fixture

on the orbiting facility.

For the latest information about the launch of Discovery on the STS-133 mission, visit [http://www.nasa.gov/mission\\_pages/shuttle/main/index.html](http://www.nasa.gov/mission_pages/shuttle/main/index.html).

*Martel, an AI Signal Research Inc. employee, supports of the Office of Strategic Analysis and Communications.*

## Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Marshall Star Ad Form." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, Nov. 18, is 4:30 p.m. Thursday, Nov. 11.

### Miscellaneous

Four burial plots, Masonic Gardens at Valhalla Memory Gardens, \$3,000, includes name change fee. 256-783-9018

Solid wood train table with attached train track, buildings, \$85. 256-895-2959

Playstation 3 game, Little Big Planet, Game of the Year edition, rated E, \$25. 256-828-1234

Dual Hi-Fi 4-head VCR for dubbing VHS tapes, remote, manual, rewinder, \$50 obo. 256-880-3737

PLX Kiwi Wifi diagnostics transmitter, sensor support, for

iPhone or iPod Touch, \$150. 256- 457-5823

Hitachi 32 inch HDTV, 32UDX10S, CRT, SRS, Pict-in-Pict, illuminated universal remote, 720P/1080i Max. 256-830-0851

Lexmark X1185 color all-in-one printer, \$25. 256-603-0741

Whirlpool electric dryer, \$70; Amana large capacity gas dryer, \$120. 256-532-3195

Sofa; chair; ottoman; coffee table; end table; TV; bakers rack; kitchen table with chairs. 256-244-2961

Kasson pool table, fruitwood, Queen Anne feet, leather pockets, \$1,950. 256-880-6563 leave message

Television armoire, dark wood, \$200. 256-837-3562

Two tickets, "Fiddler on the Roof," Saturday, Nov. 20, VBC, seats J 4&5. 256-503-7060

Two tickets to AL vs. Georgia State football game, \$45 each. 256-895-9520

Havanese female, almost two years old, AKC champion bloodlines, silver/cream/black. 931-455-7303

Craftsman tool chest, rolling cart, red, \$50. 256-777-1810

Silver bar, 100 oz., \$2,500 obo. 256-656-7997

### Vehicles

2007 Ford Five Hundred Limited, loaded, navigation system,

charcoal gray, 87k miles, \$10,000. 256-931-4144

2006 Lexus GS 300, 49k miles, loaded, including iPod integration, \$26,000

2003 Nissan FrontierXE, silver, gray interior, auto/4cyl, flipdown backseat, bedliner, toolbox, 98k miles, \$6,800. 256-690-8752

2001 BMW 325i, five speed, silver/ black, leather, 139k miles, \$6,500 obo. 256-658-8241

2000 Chrysler Town & Country, one-owner, all service records, \$5,200. 256-233-5620

1994 F-150 Ford truck \$2,400; 16' cattle trailer, \$800; tractor hay fork, \$115. 256-682-1254

1982 Alfa Romeo GTV6, includes spare engine, heads, other parts, 85k miles, \$3,500. 256-679-5418

15' fiberglass fishing boat, 80hp Mariner, trailer, trolling motor, depth finder, \$3,200 obo. 256-651-3655

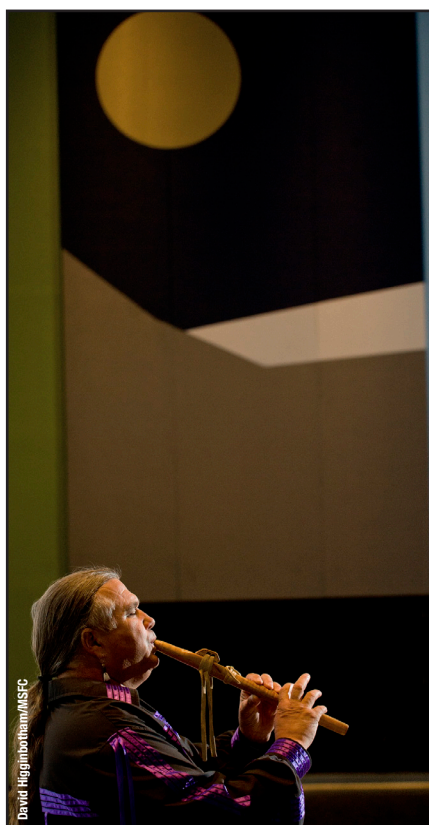
### Wanted

Lift chair/recliner in good condition. 256-214-2269

Land to deer hunt, willing to work for right or open for lease options. 256-468-8906

Tile or tree work to do, licensed and insured. 256-468-8906

## 'Mitakuye Oyasin'



The Lakota expression "Mitakuye Oyasin," which translates as "We are all related," is a fitting theme for the Marshall Space Flight Center's annual Native American Heritage Month celebration. Held Nov. 4 at the U.S. Space & Rocket Center, the event included traditional Native American music by flutist Jimmy "Yellowhorse" Webster, left, of Decatur, Ala., and remarks by retired NASA astronaut John Herrington, right, a member of the Chickasaw Nation and a mission specialist on the STS-113 mission in 2002. Marshall and Team Redstone personnel were joined by some 300 Huntsville-area students in grades 3-5. The event was organized by Marshall's Office of Diversity and Equal Opportunity. For more information, visit <http://eo.msfc.nasa.gov>.

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